AMENDMENTS TO CLAIMS

1. (Currently Amended) A method for monitoring an optical signal-to-noise ratio (OSNR) using a polarization-nulling method, comprising the steps of:

(a) linearly polarizing an arbitrarily polarized optical signal including an unpolarized ASE noise;

(b) separating the optical signal and the ASE noise from the linearly polarized optical signal including the unpolarized ASE noise to measure a power of the optical signal and a power of the ASE noise included in a bandwidth of an optical signal; and

(c) obtaining the optical signal-to-noise ratio (OSNR) using the measured optical signal power and ASE noise power,

wherein the step (a) comprises the step of:

(a1) allowing the polarization of the linearly polarized optical signal including the unpolarized ASE noise to be continuously changed; and

wherein the step (b) comprises the steps of:

(a2) measuring a minimum power and a maximum power of the signal outputted from a linear polarizer; and

(a3) measuring the power of the optical signal and the power of the ASE noise included in the bandwidth of the optical signal from the measured minimum power and maximum power of the signal outputted from the linear polarizer.

2. (Original) The method according to claim 1, wherein the step (a) is performed by allowing the arbitrarily polarized optical signal including the unpolarized ASE noise to pass through a rotating quarter-wave plate.

3. (Currently Amended) The method according to claim 1, wherein the step (b) further comprises the ~~steps~~ step of:

separating the optical signal and the ASE noise from the linearly polarized optical signal by allowing the linearly polarized optical signal including the unpolarized ASE noise to pass through a rotating linear polarizer[[;]]

~~measuring a minimum power and a maximum power of the signal outputted from the rotating linear polarizer; and~~

~~measuring the power of the optical signal and the power of the ASE noise included in the bandwidth of the optical signal from the measured minimum power and maximum power of the signal outputted form the rotating linear polarizer~~.

4. (Currently Amended) An apparatus for monitoring an optical signal-to-noise ratio (OSNR) using a polarization-nulling method, comprising:

a rotating quarter-wave plate ~~adapted to~~ means for causing 360 degree rotation of a quarter-wave plate and linearly ~~polarize~~ polarizing an arbitrarily polarized optical signal including an unpolarized ASE noise more than four times during the 360 degree rotation of the quarter wave plate to output the linearly polarized optical signal;

a rotating linear polarizer ~~adapted to output an~~ means for causing rotation of a linear polarizer and outputting a signal having a power varying with an angle between the polarization state of the inputted optical signal including the unpolarized ASE noise from the quarter-wave plate means and the polarization state of the linear polarizer means;

a measuring means ~~adapted to~~ for measuring a minimum power and a maximum power of the signal outputted from the rotating linear polarizer means; and

a calculating means ~~adapted to measure~~ for measuring a power of the optical signal and power of the ASE noise included in a bandwidth of an optical signal according to the measured minimum power and maximum power of the signal inputted thereto from the measuring means to obtain the optical signal-to-noise ratio (OSNR).

5. (Currently Amended) An apparatus according to claim 4, wherein the measuring means comprises a photodetector ~~adapted to convert~~ means for converting the signal inputted thereto from the rotating linear polarizer means into an electric signal to output the converted optical

signal, and the calculating means comprises a computer or a microprocessor ~~adapted to obtain~~ means for obtaining the optical signal-to-noise ratio (OSNR) according to the electric signal inputted thereto from the measuring means.